APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,630	12/11/2003	Giora Biran	FIS920030278US1	1660

			EXAMINER
23550	7590	11/14/2005	NGUYEN, QUANG N

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ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/733,630	BIRAN ET AL.
	Examiner	Art Unit
	Quang N. Nguyen	2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 October 2005*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Detailed Action

1.   This Office Action is in response to the Amendment filed on 10/13/2005. Claims

1-20 are presented for examination.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   **Claims 1, 3-8, 10-15 and 17-20 are rejected under 35 U.S.C. 102(e) as being**

anticipated by Pazos (US 2005/0068896 A1).

4.   As to claim 1, Pazos teaches a system and method for transmission control

protocol (TCP) acceleration, comprising:

        generating a first duplicate TCP acknowledgement (Ack) covering a received

TCP segment *(some duplicate ACKs will result when packets are received out-of-order)*

that is determined to be valid by TCP and was dropped by TCP based on an upper layer protocol (ULP) decision *(inherently, the receiver could place the received out-of-order TCP segments in a temporary buffer or drop the received out-of-order TCP segments if the receiver runs out of buffer for out-of-order TCP segments and process only in order)* (Pazos, paragraphs [0005] and [0007]); and

transmitting the first duplicate TCP Ack (Pazos, paragraphs [0005] and [0007]).

5.   As to claim 3, Pazos teaches the method of claim 1, wherein the first duplicate TCP Ack is generated for a TCP segment regardless of whether the TCP segment is in-order or out-of-order *(a TCP receiver issues a duplicate ACK whenever an out-of-order segment arrives)* (Pazos, paragraph [0007]).

6.   As to claim 4, Pazos teaches the method of claim 1, wherein the first duplicate TCP Ack is generated even where a next in-order TCP segment has not been received *(all packets received after a lost or out-of-order packet will trigger duplicate ACKs)* (Pazos, paragraph [0007]).

7.   As to claims 5-6, Pazos teaches the method of claim 1, further comprising the steps of generating and transmitting a second duplicate TCP Ack covering a next out-of-order received TCP segment *(if packets are not lost, but are simply received out-of-order, some duplicate ACKs will result, i.e., will be generated and transmitted to the source)* (Pazos, paragraph [0007]).

8.   Claims 7-8 and 10-13 are corresponding system claims of method claims 1 and

3-6; therefore, they are rejected under the same rationale.

9.   Claims 14-15 and 17-20 are corresponding computer program product claims of

method claims 1 and 3-6; therefore, they are rejected under the same rationale.

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11.   **Claims 2, 9 and 16 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over Pazos, in view of Elzur (US 2003/0172342 A1).

12.   As to claim 2, Pazos teaches the method of claim 1, but does not explicitly teach

wherein the ULP includes at least one of a marker with protocol data unit alignment

(MPA) protocol, a direct data placement (DDP) protocol, and a remote direct memory

access (RDMA) protocol.

In a related art, Elzur teaches a system and method for identifying upper layer protocol (ULP) message boundaries, wherein the upper layer (UL) may form a ULP packet by placing ULP control information or ULP data unit (ULPDU) as a payload for the Lower Layer Protocol such as RDMA/DDP and the RDMA/DDP PDU may be placed into a framing PDU (Elzur, paragraph [0021]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Pazos and Elzur to include at least one of a marker with protocol data unit alignment (MPA) protocol, a direct data placement (DDP) protocol, and a remote direct memory access (RDMA) protocol in the ULP since such methods were conventionally employed in the art to allow the system to embed and identify the beginning of ULP control information (boundary information) about the ULP payload to indicate in which memory and in which location within the memory the ULPDU data should be directly placed.

13.   Claim 9 is a corresponding system claim of method claim 2; therefore, it is rejected under the same rationale.

14.   Claim 16 is a corresponding computer program product claim of method claim 2; therefore, it is rejected under the same rationale.

Response to Arguments

15.   In the remarks, Applicant argued in substance that

(A)   Prior Arts fail to disclose "generating a first duplicate TCP acknowledgement (Ack) covering a received TCP segment that is determined to be valid by the TCP and was dropped by TCP based on an upper layer protocol (ULP) decision", as claimed.

As to point **(A)**, **Pazos** teaches a TCP receiver issues a duplicate ACK whenever an out-of-order TCP segment arrives. Hence, all packets received after a lost packet will trigger duplicate ACKs. If packets are not lost, but are simply received out-of-order *(i.e., a received TCP segment that is determined to be valid)*, some duplicate ACKs will result **(Pazos, paragraphs [0005] and [0007])**. Inherently, the TCP receiver could place the out-of-order received TCP segments in a temporary buffer or drop the out-of-order received TCP segments if the receiver runs out of buffer for out-of-order TCP segments *(i.e., a received TCP segment that is determined to be valid and was dropped)* and process only the in order received TCP segments **(supported by Elzur, paragraph [0042])**.

16.   Applicant's arguments as well as request for reconsideration filed on 10/13/2005

have been fully considered but they are not deemed to be persuasive.

17.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

        A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

18.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang N. Nguyen whose telephone number is (571) 272-3886.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's SPE, Rupal Dharia, can be reached at (571) 272-3880. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER